REOPICOI

DATA EVALUATION RECORD

CASE GS 0096 PICLORAM PAGE 1 OF 3

CHEM 005101

BRANCH EEB DISC Aquatic Toxicity - Fish

FORMULATION Crystals

Woodward, D. F. 1976. Toxicity of the Herbicides Dinoseb and Picloram to Cutthroat (Salmo clarki) and Lake Trout (Salvelinus mamaycush). J. Fish. Res. Board Can. 33:1671-1676.

SUBST. CLASS = S

DIRECT RVW TIME = (MH)

REVIEWED BY: M. A. Mayes, Ph.D.
TITLE: Aquatic Toxicologist
ORG: Health and Environmental Sciences
LOC/TEL: The Dow Chemical Company

SIGNATURE: Marti A. Mayes DATE: 10-14-82

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE: DATE:

CONCLUSIONS

The information provided in this report is insufficient to allow for an evaluation other than invalid. A conversation with the author suggests credible intent and performance in this study. However, the design of the study renders this project scientifically unsound. The following is a critique of the more obvious problems.

Acute Tests

Only five fish were used per concentration; this is in contradiction to the stated procedures to be followed. The concensus among aquatic toxicologists is that a minimum of 10 fish per concentration are needed for adequate statistical analysis.

Chronic Tests (Embryo-Larvae Test)

There was a 70-day exposure period during the embryo-larvae test. The concentration of picloram was measured on only the highest test concentration and then only at 14, 28 and 42 days. Also the statement that the analyzed concentrations of picloram were low "due to loss by volatilization" casts doubt on the actual exposure concentrations.

DATA EVALUATION RECORD

1. CHEMICAL: Picloram 4-amino-3,5,6-trichloropicolinic acid

2. FORMULATION: Technical grade 90% active

3. Woodward, D. F. 1976. Toxicity of the Herbicides Dinoseb and Picloram to Cutthroat (Salmo clarki) and Lake Trout (Salvelinus mamaycush). J. Fish. Res. Board Can. 33:1671-1676.

4. REVIEWED BY: M. A. Mayes, Ph.D.
Aquatic Toxicologist
Health and Environmental Sciences
Dow Chemical U.S.A.

5. DATE REVIEWED: 10-1-82

6. TEST TYPE: Aquatic toxicity: Fish

A. Test Species: Cutthroat trout (Salmo clarki), Lake Trout (Salvelinus mamaycush)

7. REPORTED RESULTS:

1. In acute tests water hardness, and Ph and temperature had little affect on the toxicity of picloram. There was very little difference in species sensitivity. The 96 hr LC_{50} values ranged from 2.1-8.6 mg/L.

2. Yolk sac absorption to growth of lake trout fry was affected by picloram at concentration of .035 mg/L.

METHODS AND MATERIALS:

The acute tests were reported to be conducted according to the procedures of the Committee on Methods for Toxicity Tests with aquatic organisms. The chronic tests were reported to be conducted according to the procedure of American Public Health Association (1971 Standard Methods for the Examination of Water and Waste Water.)

STATISTICAL ANALYSIS:

Acute tests: Not fully described

Embryo-larval test: Length and weight of fry was analyzed by analysis of variance and multiple means comparison tests.

RESULTS:

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2. Yolk sac absorption to growth of lake trout fry was affected by picloram at concentration of .035 ag/L.

REVIEWER'S EVALUATION:

Acute Tests

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VALIDATION:

Classification: Invalid

Rationale: No dose mortality data, to few fish exposed in acute tests, inadequate analysis of concentrations in embryo-larval tests.

Repairability: N.A.